

PROBING THE PROPERTIES OF EXCITED STATES IN THE TRIAXIAL STRONGLY DEFORMED POTENTIAL WELL IN ^{163}Lu

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Results from discrete line spectroscopy has shown that in nuclei around the $A \sim 165$ Lu/Hf region, states of stable triaxial deformation (TSD) coexist with states of normal deformation at high angular momentum. The triaxial deformation has been proved by the observation of the wobbling excitation mode in the odd proton members of the Lu isotopes $^{161-167}\text{Lu}$ [1-4]. To further explore the properties of the triaxial potential-well with the currently available experimental information, the method of analyzing the fluctuations of the counts[5] in the $E\gamma$ - $E\gamma$ spectrum has been performed in the nucleus ^{163}Lu [6]. The results show that approximately 35 discrete but unresolved bands of triaxial nature feed the TSD yrast states in addition to the bands observed in the discrete line spectroscopy. In addition, about 20 unresolved TSD bands feed the normal deformed states close to yrast. However, to determine if *one* unresolved bands is feeding states of both deformations or if it exclusively feed only one of the potential wells, one need to perform a covariance analysis[7].

In the present work, the covariance analysis has been performed on ^{163}Lu , using the currently largest dataset available for that nucleus today.

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